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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,812	11/09/2001	Dan Nobbe	CS11202	9495

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MOTOROLA INC
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EXAMINER

JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/039,812	NOBBE ET AL.	
	Examiner	Art Unit	
	Alexander Jamal	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 2, 8, 13, 14, 19, 3-5, 7, 9, 10, 12, 15-17, 20** rejected under 35 U.S.C. 103(a) as being unpatentable over Wagemans et al. (6697606), and further in view Donig et al (5524037).

As per **claim 1**, Wagemans discloses a transceiver that may be used in a direct communications system (Col 1 lines 10-60). The transceiver comprises a reference oscillator signal (means 6 in Fig. 1) coupled to divider means 7. The divider means can be any set of 2 dividers, or 3 dividers in series (Col 2 lines 2-18). Furthermore, the reference signal may be applied to frequency multipliers (along with the dividers) to produce the required frequency (Col 2 lines 60-67). However, Wagemans does not disclose the specific arrangement of a frequency doubler coupled to a divide by 3 circuit, with the output and a delayed version of the output coupled to an AND gate in order to adjust the duty cycle of the output waveform.

In Wagemans system, the divider means can be any set of 2 dividers, or 3 dividers in series (Col 2 lines 2-18). Furthermore, the reference signal may be applied to frequency multipliers (along with the dividers) to produce the required frequency (Col 2 lines 60-67). It would have been obvious to one of ordinary skill in the art at the time of

this application that a combination of frequency multipliers and dividers could be implemented in series for the purpose of producing the correct operating frequency from a given reference oscillator in order to implement a predetermined communications standard.

Donig discloses that frequency dividers will often leave the output signal with a non-harmonically-optimum duty cycle (ie. not 50%). Donig discloses that a delayed version of an output signal can be delayed and the original and delayed output signals can be fed into a logic gate in order to adjust the duty cycle (Col 1 line 40 to Col 2 line 31). It would have been obvious to one of ordinary skill in the art at the time of this application that a logic gate (AND or OR) could be used with the output signal and delayed output signal in order to recover the duty cycle from any frequency division operations.

As per **claim 8**, claim rejected for same reasons as claim 1 rejection.

As per **claim 13**, claim rejected as a method performed by the device of claim 1 rejection.

As per **claims 2,14,19**, Wagemans's system in view of Donig's teachings comprises a divide by three circuit (Donig: Fig. 1). In the circuit, the delay device (6) is clocked by the same signal (1) input into the frequency divider. If Wageman's system were to implement a fractional dividing circuit (such as $2/3$) then the delay generating means would be clocked by the input to the divide by 3 circuit.

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As per **claims 3,9,20**, claim rejected for same reasons as claim 2 rejection. The delay period is $\frac{1}{2}$ clock cycle in order to return the duty cycle to 50% (Donig: Col 2 lines 1-12).

As per **claims 4,5,10,16,17**, the gate is an AND gate and the delay circuit is a D flip flop (Donig).

As per **claims 7,12,15**, Donig discloses that the divide by three circuit has a $\frac{2}{3}$ duty cycle (Col 1 lines 10-30).

3. **Claims 6,11,18**, rejected under 35 U.S.C. 103(a) as being unpatentable over Wagemans et al. (6697606) and Donig et al (5524037) as applied to claims 1,8,13, and further in view of Lehtinen (5983081).

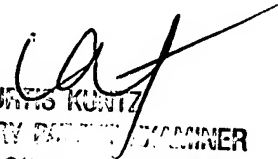
As per **claims 6,11,18**, Wageman's and Donig disclose applicant's claims 1,8,13, but they do not specify an additional switchable frequency doubler coupled to the frequency division circuitry. Lehtinen discloses a direct conversion receiver with a selectable frequency multiplier (28,31 in Fig. 2) used to produce a reference signal used in the system. Lehtinen teaches that implementing a frequency multiplier (such as a doubler) would allow for a reduction in frequency synthesizer in the case where the transceiver is used for multiple protocols (such as PCN and GSM) (Col 1 line 40 to Col 2 line 29). It would have been obvious to one of ordinary skill in the art at the time of this application that the reference frequency could be switchably doubled for the purpose of allowing the system to more efficiently handle multiple signaling protocols.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9315 for After Final communications.

AJ
April 12, 2005


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
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